

# WATER QUALITY MEMORANDUM

## Utah Coal Regulatory Program

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December 16, 2009

TO: Internal File

THRU: James Smith, Permit Supervisor *JS* 12/16/09

FROM: Kevin Lundmark, Environmental Scientist II *KL*

RE: 2007, 3rd Quarter Water Monitoring, Canyon Fuel Company (CFC), LLC, Dugout Mine, C/007/0039-WQ07-3, Task ID #3179

Canyon Fuel Company is conducting mining operations in Dugout Canyon. Mining is progressing north and eastward under the Book Cliffs. Several springs are located in the canyons. Operations are also taking place at a fan portal in Pace Canyon and a refuse pile in the valley below Dugout Canyon. This report is based on data compiled in file O:\0070039.dug\WaterQuality\Dugout\_All\_Dec2009.xls.

Table 7-4 of the MRP identifies the ground water monitoring (frequency) plan for wells and springs. Table 7-4 also identifies the parameters that will be monitored. Appendix 7-6 of the MRP identifies the UPDES sites, and current status monitoring parameters, discharge limits and monitoring frequency. Table 7-5 identifies the surface water program and water quality parameters that will be monitored.

The protocols set forth in Table 7-4 and 7-5 identify monitoring programs to be followed during years of normal precipitation and non-normal precipitation, as defined in the PHC. Selected surface and groundwater sites will be monitored weekly from April 1 through August 31 during the first non-normal wet (>110% of average) and dry (<70% of average) years following permit issuance, as defined by the NRCS snow pack for the Price - San Rafael area on March 1. The first non-normal dry year occurred in 2002, and weekly monitoring was completed April to August 2002 per the protocol. The NRCS snow pack data on March 1, 2007 for the Price-San Rafael area was 60% of average, as reported in the Dugout Canyon 2006 Annual Report.

**1. Were data submitted for all required sites?**

**Springs** YES [X] NO [ ]

Springs in the operational and post-mining groundwater monitoring program include SC-65, SP-20, SC-14, SC-100, SC-116, 200, 203, 227, 259, 259A and 260. Locations of these springs are noted on Plate 7-1. Groundwater discharge from the Gilson coal seam workings is also monitored and identified as location MD-1.

Springs 200, 227, 259, SC-100 and MD-1 reported no flow. Springs 203, 259A, 260, SC-116, SC-14, SC-65 and SP-20 reported flows. Complete data were submitted for the flowing springs. Although not required by the MRP in 3<sup>rd</sup> Quarter 2007, monitoring data were also submitted for spring locations 321 and 322.

**Streams**      YES ☒ NO ☐

Surface Water sites DC-1, DC-2, DC-3, PC-1a, PC-2, RC-1 and FAN (a new site on Pace Creek) are monitored for flow and chemistry once each calendar quarter during years with normal precipitation.

Stream sites DC-3 and RC-1 reported no flow. DC-1 reported flow of 804 gpm. DC-2 and PC-1a both had flows of 10 gpm. Stream sited PC-2 and FAN had flows of 13 gpm and 41 gpm, respectively. Water quality data were reported for all stream sites that had flow. Although not required by the MRP in 3<sup>rd</sup> Quarter 2007, stream monitoring was also performed at locations SS-1 and SS-2.

**Wells** YES ☒ NO ☐

Table 7-4 and Section 731.200 of the MRP specify that wells GW-10-2, GW-11-2 and GW-24-1 are to be monitored quarterly for water levels. Well GW-24-1 became blocked during the winter of 1999-2000 and was removed from monitoring after 4<sup>th</sup> Quarter 2004.

Water level measurements were reported for wells GW-10-2 and GW-11-2. In addition, water level data were collected for wells DH-1, DH-2 and DH-3, and water quality data was submitted for DH-1.

**UPDES**      YES ☒ NO ☐

There are six discharge sites from the disturbed area and mine into Dugout and Pace Canyon Creeks under UPDES permit UT0025593 issued by the Utah Division of Water Quality. The permit identifies the maximum discharge levels and monitoring requirements for specified constituents. Mine water is currently pumped directly into the Dugout Creek (001). Disturbed runoff is directed to the sedimentation pond that can discharge to the Dugout Creek (002). Discharge Site 003 is a discharge from the 30,000-gallon water tank and Site 004 is the discharge from the waste rock area. Mine water is pumped to Pace Creek (005) out the Fan Portal. Disturbed area runoff from Pace Canyon is directed to a catch pond, which discharges to Pace Creek (006).

Site 001 discharged between 1 to 260 gallons per minute. Sites 002, 004 and 006 showed no discharge in the quarter. Site 003 discharged 1 to 604 gpm and Site 005 discharged 489 to 700 gpm.

**2. Were all required parameters reported for each site?**

**Springs**      YES ☒ NO ☐

The required parameters were reported when flow was present.

**Streams**      YES ☒ NO ☐

The required parameters were reported when flow was present.

**Wells**      YES ☒ NO ☐

**UPDES**      YES ☒ NO ☐

The required parameters were reported when discharges took place.

**3. Were irregularities found in the data?**

**Springs**      YES ☐ NO ☒

**Streams**      YES ☒ NO ☐

Water monitoring samples collected August 7, 2008 contained elevated TSS concentrations at location DC-1 (3,840 mg/L) and DC-2 (10,700 mg/L). Total iron and total manganese were also elevated for these stream monitoring locations. The operator reported that the elevated values were due to a storm event and muddy water.

**Wells**      YES ☐ NO ☒

**UPDES**      YES ☐ NO ☒

**4. On what date does the MRP require a five-year resampling of baseline water data.**

The resampling due date is July 2014.

**5. Based on your review, what further actions, if any, do you recommend?**

None.

**Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements?** ☐ Yes ☒ No

A copy of the data file will be e-mailed to the Mine Operator and DOGM Mine Inspector

identifying any missing and irregular data.

**6. Follow-up from last quarter, if necessary.**

**Did the Mine Operator submit all the missing and/or irregular data (datum)?**

This report and the previous report were delayed to process mine permits.

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